

Morphophonemics of Loan- words in Translation

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Abstract

A natural by-product of translation is the adoption of technical, scientific and culture-specific terms for which ready-made equivalents are either unavailable or unpopular. The infiltration of loan-words into standard Arabic is a landmark of the flexibility of Arabic morphology. Yet, the methods of analyzing assimilated (i. e. Arabicized) loan-words often assumed an impressionistic arbitrary nature. The current study attempts to linguistically diagnose and provide a typology for classifying any systematic phonological and morphological changes while also accounting for anomalies. The study adopts a comparative morphophonemic approach to SL/TL forms in view of lexical etymology and the methodology of classical philology and modern linguistics.

«A pure language is a poor language »

INTRODUCTION:

A natural by-product of translation is the adoption of technical, scientific and culture-specific terms for which ready-made equivalents are either unavailable or unpopular. The process whereby a particular language incorporates in its vocabulary words from another language is technically designated by such terms as «borrowing», «loaning» or «adoption», though the latter is usually the case¹.

The study analyses a corpus of loanwords in Arabic with the aim of investigating the phonological and morphological adaptations that are applied to the incoming lexical items. The term «adaptation» as Holden explains, refers to the process in the recipient language of alternating the phonological (and at times the morphological) make-up of the loanword². «Adoption», on the other hand, is a term that describes the assimilation into the recipient language of loanword while perserving their original form and pronunciation as per the donor language³. In Arabic, some loanwords are fully-naturalized and thus become the roots for further derivations. Others, however, remain foreign or partially translated.

1.THE CONCEPT OF ‘ARABICIZATION’ AND THE STATUS OF LOANWORDS :

Arabicization is a process whereby foreign words are incorporated into the language usually with phonological or morphological modifications so as to be congruent with the Arabic phonological and morphological paradigms, hence the term «analogical Arabicization». Yet, whereas Sībawayh (author of al-Kitāb) and al-Jawaliqi (author of al-Mu’arrab) recognize all foreign vocabulary used by the Arabs however distant from Arabic moulds some of it might be, al-Harīrī and al-Zamakhsharī advocated that loanwords which violate Arabic patterns degenerate the language⁴. Al-Harīrī, for example, includes in his treatise on solecism a number of borrowings which are in breach of Arabic patterns⁵.

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Non-analogical		Analogical		Native word as a mould
Loanform	pattern	Loanword	pattern	
هاوَن	فاعِل	هاوون	فاعول	فاروق
دَسْتور	فَعول	دُسْتور	فعول	‘Jester’ بهلول
سَرَداب	فَعال	سِرَداب	فِعول	‘garment’ سِرِبَال

Non-analogical patterns of loanwords

The definition of Arabicization *التعريب*, has always been a matter of controversy among Arab philologists particularly with regard to the status of the borrowed word and the parameters that apply in the naturalization process of foreign vocabulary.

To begin with, ancient philologists used a multitude of different labels to refer to foreign vocabulary in Arabic. Al hamzaoui *الحمزاوي* cites the word *الغريب* as used by Ibn Abbas عباس in his book *Gharibal qoran مجاز القرآن* in *أبو عبيدة* Abou abayda and Assoyyouti السيوطي in *Al Itqan fi olum al qoran الإتقان في علوم القرآن*. Similarly, the label *مما أعرب* was used by Sibawayh سيبويه in *Al kitab الكتاب*, Al jawaliki الجواليقي in *Al Moarrab mina lkalām alajjami المعرب من الكلام الأعجمي* and Ibn Jinni ابن جني in *Al khassais الخصائص*. The latter two also used the terms *Addakhil الدخيل* and *Al aajami الأعجمي*. In fact, the word *Addakhil الدخيل* was used by Al khafaji الخفاجي in the title of his book *Chifaô al ghalil fima fil arabia min dakhil شفاء الغليل فيما في العربية من دخيل*. One may also read such words as *Al moarrab المعرب* or *attaarib التعريب* in *Assihah الصحاح* by Al Jawhari الجوهري and both in *Al mozhir المزهري* and *Al mohaddab fima waqaa filqoran mina lmoarrab المعرب من القرآن في الوقف في القرآن* by Assoyyouti السيوطي. Finally, Al khalil bno ahmed الخليل بن أحمد in *Al ayn العين* employs various labels such as *Al mobtadaâ المبتدع*, *al moyallad المولد* and *Addakhil الدخيل*.

Despite the use of different names in labeling loanwords, there was one common ground in classifying foreign vocabulary in Arabic under two categories: *Moarrabât معرّبات* and *Moalladât مولدات*. Roughly speaking, *معرّبات* "Arabicized or fully-assimilated loanwords are those words which were adopted before the middle of the second century A.H. or what is commonly known as 'Asr al ihtijaj عصر الاحتجاج' the authoritative age', while *مولدات* 'neologisms' is used to designate words that were borrowed thereafter.

Assouyouti السيوطي defines *Almoallad المولد* as any word which was introduced by the non-indigenous who were not an authoritative source on language particularly after the second century A.H.⁷ However, Mohamed al amine al mohibbi محمد الأمين المحبي considers as *moalladat مولدات* all words that were changed by the populace in their original sounds or vowels (irrespective of any given date)⁸. Finally, the contemporary *عبد القادر المغربي* designates as *مولد* any word that was unknown to Arab philologists⁹. Within this framework, the definition of *مولدات* is left wide open to encompass both words that were borrowed after *عصر الاحتجاج* «the authoritative age» until now, and any other native words that were subjected to changes in pronunciation or otherwise.

In *شفاء الغليل*, *الخفاجي* cites as *مولدات* some common words that have a high frequency of usage. For example, *مقامة* «poetry session», *تشويش* «disturbance», *الحق* «dexterity», *ماهية* «essence», *فذلّة* «abstract», *جريدة* «newspaper» and *بطاقة* «card» are *مولدات* either by way of being borrowed from languages or for having no «classical» origin (i. e. no previous authoritative citation by the eloquent speakers of Arabic¹⁰).

Recently, the Egyptian language Academy set down its own definition of *المولد*. To quote, *المولد* is a word used by *«المولدون»* the non-indigenous in a way contrary to that of the Arabs. Those words which fall in line with the canons of Arabic are deemed acceptable, whereas those corrupted or improvised words which infringe them are not sanctioned by the Academy to be used in pure (i.e. classical) Arabic.¹¹ »

With regard to methodology, Eid propounds that Arabicization is, by and large, sanctioned by

common usage and does not follow any rigid analogical rules. While early philologists were busy at work in their attempt to lay the canons for the process of Arabicizations by describing the already-assimilated words, their ultimate goal was to formulate rules that were in line with Arabic morphological patterns. Such rules were, however, vulnerable to exceptions¹². This could be accounted for by the fact that their data was in itself inconsistent and marred with anomalies. They were simply applying rules of Classical Arabic morphology on foreign lexical items that have their own rules in their source language(s). Important in this context is Yowell Aziz's view on the application of ancient methods of transliteration :

« ... the ancient Arabic writer was not always consistent in his (transliteration) methods. Some of the ancient practices are no longer suitable... »¹³

In a nutshell, those who undertook the task of translating foreign books into Arabic or those who came into contact with speakers of other languages had no preset rules for Arabicizing foreign words. The transliterated form of a given loanword was, thus, in concordance with their best knowledge of its pronunciation¹⁴. At times, they were not adequately fluent in the source language, and, therefore, the transliteration form of a given loanword may be the end product of a mispronunciation rather than any real phonological or morphological modifications.

2. TYPES OF PHONOLOGICAL AND MORPHOLOGICAL CHANGES IN LOANWORDS :

This section purports to examine any systematic segmental or suprasegmental alterations in loanwords. The aim is to determine whether such changes are rule-governed in view of the canons of Arabic phonology and morphology. Changes may range from assimilation, dissimilation, metathesis, elision to doubling or replacing one or more segments of the original. In his book al-Kitab, Sibawayh remarks that (the Arabs),

«Often change the condition or a word from what it was in the foreign language by assimilating to Arabic those letters which are not Arabic and replacing a letter though it occurs in Arabic by another one. Furthermore, they change the vocalization and position of augmentative letters without attaining the Arabic word structure for, after all , it is a word of foreign origin whose power to attain the Arabic word structure is in their view not sufficient. Frequently, they shorten as in the « nisbah » construction or add whereby they either attain the Arabic structure or not, as in the case of كهرمان and فيروز سراويل إسماعيل إبراهيم آجر. Often they leave a noun unchanged when its letters are like theirs, be its structure Arabic or not as in the case of خرم خراسان and كركم »¹⁵

Al -Karūrī الكاروري, on the other hand, ascribes all changes that take place in loanwords to one governing criterion. He defines this as the tendency by the Arabs to attain sound harmony¹⁶.

2.1. SOUNDS WHICH EXIST IN BOTH THE LOANFORM AND ARABIC BUT WHICH ARE YET REPLACED BY SIMILAR SOUNDS OF THE SAME NATURAL CLASS¹⁷ :

Sibawayh hints at such segmental changes in his book الكتاب :

« Often they change the combination of a word from what it was in the foreign language, by assimilating to Arabic letters such as are not Arabic, and replacing a letter, even though it be like Arabic, by another one »¹⁸ But, « they may have a noun unchanged when its letters are like theirs »¹⁹ ».

He, further, describes some irregular changes of loanword sounds that have Arabic counterparts. For instance, he cites the word سراويل (from Persian شراويل) in which the ش was replaced by a س, the proper name إسماعيل (from Hebrew/ Syriac إسماوיל)²⁰ wherein the ش was turned into س and a ع was substituted for the و and the Persian كفجلیز « a ladle » which was Arabicized as قفشليل by replacing the ج → ق, the ج → ق, the ج (or rather ج)²¹ by a ش and the final ل → ز (by regressive assimilation under influence of the original ل).

Al-Khafājī الخفاجي remarks that irregular changes of loanword sounds that have indigenous counterparts are confined to the ز, س, ش and the ل²². Yet, الجواليقي cites instances of similar cases. For

examples, he traces the origin of التوت to the Persian توت (i. e. ت → ث) and الحرباء to Persian حربا (i. e. ح → ت). Indeed, these sounds along with those mentioned by both سيوييه and الخفاجي constitute but few members of a larger group. For instance, in the course of our study we came across some frequent changes of foreign segments that could have been retained intact by dint of having corresponding Arabic equivalents. Some of these segments/ sounds include the following:

A.CONSONANTS :

1.Hamza

In Persian a همزة is often replaced by other segments :

أبرة: ح → أ	→ 'bustard' حباري
أنزروت: ع → أ	→ 'glue' (i. e. replaced by its velarized counterpart) عنزروت
أربيج: أ → ن	→ « mouthpiece of a narghile » نربيج
أندام: ه → أ	→ 'endive' (Also Latin endivia → هندباء 'endive')
زراب: ي → أ	→ 'literally : gold-water(also used as a bird's name)' زرياب

Similarly, the همزة (or its equivalent) is velarized in loanwords from other languages²⁴.

أ: ع → akhathis (Greek)	→ 'carnelian' عقيق
somaet (Ethiopic)	→ 'silo' صومعة

2. ت

د → ت	(persian) pheasant تراج	→ (تدرج or دراج)
	(persian) زرتك	→ زردج
ط → ت	Stabulum (Latin)	→ إسبطل
	Augustus (Latin)	→ أغسطس

3. ث

ت → ث	(persian) توت	→ توت ²⁵
	(Greek) thiryakos	→ ترياق ²⁶
د → ث	(Greek) kantharitis	→ 'vintage wine' خندريس

4. ج

ز → ج	(persian) كنج	→ 'treasure' ²⁷ كنز
س → ج	(persian) جراغ	→ 'lamp. Light' (via Aramaic شراغا) ²⁸ سراج
ش → ج	(persian) كفجليز	→ 'a ladle' قفشليل
ص → ج	(persian) كج	→ 'plaster' ²⁹ جص
ق → ج	(persian) رامج	→ 'a decoy' رامق
	(persian) كوسج	→ كوسق

5. خ

ح → خ	(persian) حربا	→ 'chameleon' حرباء
ح → خ	(Greek) enchelis	→ 'eel' أنقليس
ك → خ	(Greek) mastikhia	→ 'mastic' مصطلكي
ه → خ	(Greek) dhrakhmi	→ درهم

6. ذ → د :

فالوزج →	(persian) بالودة :	odor (Syriac)
30 آذار →		
31 زنزانه →	zindan (Turkish) : ز → د	
→ 'a mandolin-like instrument' طنبور	(persian) دنب بره : ط → د	
→ 'fashion, vogue' موضه	moda (Italian) : ض → د	
→ 'osterity, hardship' صنك	(persian) دنك	
32 شيت →	(persian) شوذ : ث → ذ	
خيد →	(persian) خيد : د → ذ	
8. ر		
→ 'pavilion' سرداق	(persian) سردار : ق → ر	
→ 'huge' (or قندفيل) قندويل	(persian) كنده بير : ل → ر	
→ برمیل (i.e. 2 nd r → م ³³)	barril (Spanish) : م → ر	
→ 'ambler' (horse) رهوان	(persian) رهوار : ن → ر	
9. ز		
→ 'a little bell' ³⁴ جلجل	(persian) زنگل ج → ز	
35 هندسة →	(persian) اندازه : س → ز	
→ (talisma) طلسم	telezma (Greek)	
36 بوليصه →	polizza (Italian) : ص → ز	
→ 'ice-cream' ³⁷ بوظه	boza (Turkish) : ظ → ز	
→ 'span of the outstretched arms (a measure) ³⁸ باغ	(persian) باز : ع → ز	
→ 'a pitcher or a jug' إبريق	أبريز : ق → ز	
→ 'a ladle' قفشليل	(persian) كفجليز : ل → ز	
10. س		
→ 'despicable' ³⁹ ترنوك	(persian) سرنوكر : ت → س	
→ 'a slipper or its cover.' جرموق	(persian) سرموزه : ج → س	
40 شهر →	sahro (Aramaic) : ش → س	
→ (could be via Aramaic 'establa') إصطبل	stabulum (Latin) : ص → س	
→ مصطكا	mastikhia (Greek)	
→ 'turban, fez' ⁴¹ طربوش	(persian) سربوش : ط → س	
11. ش		
→ 'grave' ⁴² جدث	(Hebrew) gadich : ث → ش	
→ 'thicket or woodland' ⁴³ حرج	(Hebrew) حرش : ج → ش	
→ 'pries't ; and موسى ⁴⁴ قسيس	(Syriac) qachicho : س → ش	
→ 'Moses' ⁴⁵ موسى (Hebrew)	(persian) شمن : ص → ش	
→ 'idol' ⁴⁶ صنم	(persian) شمن : ص → ش	
12. ع		

- ع → غ :to outo (Syria) → طاغوت⁴⁷ 'idol or seducer'
13. غ
 غ → ج :أرغوان (persian) → أر جوان⁴⁸
 غ → ق :دوغ (persian) → دوق⁴⁹ 'butter- milk'
 ز اغر (persian) → ز قلة⁵⁰ 'a bird's name'
14. ف
 ف → ب :fleghma (Greek) → بلغم⁵¹ 'phlegm'
 ف → ث :foum (Hebrew) → ثوم⁵²
15. ك
 ك → ج :sac (Turkish) → صاج⁵³ 'bread tin'
 ankura (Greek) → أنجر 'anchor'
 ك → خ :cartouche(French) → خرطوش 'cartridge'
 carciofo (Italian) → خرشوف 'artichoke'
 oktopous(Greek) → أخطبوط 'octopus'
 ك → ق :dhorakinon(Greek) → دراق⁵⁴ 'peach'
 kaftan (Turkish) → قفطان 'caftan'
16. ل : there are no consistent cases of ل segmental changes :
 ل → هـ :همزة (Persian) → أنجر⁵⁵ 'anchor'
 ل → ع :لشكر (Persian) → عسكر⁵⁶ 'army or constabulary'
 ل → ن :صلمو: (Syriac) → صنم⁵⁷ 'idol'
17. م
 م → ن :pamodora (Italian) → بندورة 'tomato'
 tembel (Turkish) → تنبل 'idle'
 rosatum (Greek) → رساطون 'wine mixed with honey'
18. ن
 ن → ب :تنبان (Persian) → تنبان⁵⁹ 'tight short pants' → (the Persian ن → م under influence of the ب , then the م was assimilated into the ب in a geminate form).
 ن → س :sindhon (Greek) → سندس⁶⁰ 'silk brocade'
 ن → ي :صيدلاني (Persian) → صيدلاني⁶¹ 'pharmacist'
 ن → ن :جانباز (Persian) → جنباز 'gymnastic' (alternative pronouced جنباز)
19. هـ
 هـ → ج :بنفشه (Persian) → بنفسج 'violet'
 rhetine (Greek) → راتينج 'resin(here the final sound [a] was treated on par with a [هـ])
 هـ → ح :هران (Persian) → حران⁶² 'Carrhae: ancient Mesopotamian town'
 هـ → خ :haimat (Ethiopic) → خيمة⁶³ 'tent'
 hosaf (Turkish) → خشاف 'compote or raisin juice'
 هـ → ز :دهلة (Persian) → دهليز 'foyer or corridor'
 هـ → ق :بوتة (Persian) → بوتقة 'melting pot'

→ نيزك 'meteor' (Persian) نيزة: ك → هـ

A NOTE ON FINAL |هـ| IN PERSIAN LOANWORDS:

Sībawayh سيبويه remarks that Persian speakers replace final |هـ| by either a همزة or a ي in fast speech. Thus, the Arabs replace final Persian ي which contravenes with Arabic morphological restrictions on final segments by its nearest equivalent(s), viz the ج or alternatively the ك or the ق.⁶⁴ In other words, final Persian هـ which is replaced in Arabicized loanwords by a همزة or a ج or a ح or a خ or a ز or a ق or a ك (see above under 18-هـ) is originally a ي and not a هـ.

Al-Karūrī الكاروري, however, traces the origin of the final Persian |هـ| to Middle (Pahlavi) Persian in which the final |هـ| was pronounced a ك⁶⁵ (which could, in turn, be a Persian گ |g|; the change is, therefore, phonologically warranted). Further, he notes that the final هـ was at times replaced by a ج or a ق in order to show inflectional endings. In some cases, it was mistaken for feminine ة/ة in Arabic and at times was replaced by a ة/ة as in روزنه→روزنه (Persian) 'a hatch'.⁶⁶

Ali attributes such changes of foreign sounds that have native Arabic counterparts to «the tendency of Arabic sounds to combine in certain sequences rather than in others»⁶⁷. With regard to the velarization of sounds like ق، ص، ك، د، ت and the hamza by replacing them with their emphatic counterparts viz ط، ض، ع respectively, he observes that «early Arabs were keen to preserve the character of Arabic. Emphatic sounds, being among the salient features of Arabic must thus here been to be more capable of embodying this distinction rather than the non-emphatic which are common to most languages»⁶⁸. In other words, whether the Arabs consciously or unconsciously velarized the ك، د، ت، س، their aim was to exploit the phonological potentialities of the language in order to give loanwords an Arabic characteristic⁶⁹.

B.VOWELS :

The earliest reference made with regard to the change of vocalization while Arabicizing loanwords is to be found in the book of سيبويه :

«Further, they change the vocalization as in زور and آشوب which are rendered as زور "falsehood" and آشوب "mixture"»⁷⁰.

B.1.SHORT VOWELS :

Here, we will use Arabic approximants to represent foreign vowels for reasons of uniformity.

1. فتحة |a| (or its near equivalent)

1. ألف |a:| → فتحة |a| :

bus (English) → باص (instead of possible form بَص)⁷¹

1.2. ضمة |u| → فتحة |a| :

khabast (Ethiopic) → خُبِز (bread)

gumrak (Turkish) → جُمْرَك 'customs'⁷²

دستور (Persian) → دُسْتُور 'constitution' (under influence of the following وُ)

1.3. كسرة |I| → فتحة |a|

tabac (French or Spanish) → طَبَاق 'tobacco'

cambiale (Italian) → كَمْبِيَالَة 'bill of exchange'⁷³

galbab (Ethiopic) → جَلْبَاب 'gown'

fasah (Hebrew) → فَصَح

2. ضمة |u| (OR ITS NEAR-EQUIVALENT) :

2.1 ضمة |u| → فتحة |a| :

gaborouto (Syriac)	→ جَـ بَـ رَـ وُـ ت 'omnipotence' ⁷⁴
gue hinnom (Hebrew)	→ جَـ هَـ نَـ م 'Hell' ⁷⁵
pomodora (Italian)	→ بَـ نَـ دَـ وِـ رَـ e 'tomato '
گُرکدن (Persian)	→ گَـ رَـ کَـ دَـ ن 'rhinoceros'

2.2 ضمة |u| → كسرة |I| :

ovrizon (Greek)	→ اِـ بَـ رِـ زِـ 'pure gold' ⁷⁶
بَلُور (Persian)	→ بَـ لَـ وِـ رَـ 'crystall'
mushka (Sanskrit) ⁷⁷	→ مِـ سَـ كَـ 'musk'

2.3 ضمة |u| ف |d| :

neon (English)	→ نِـ يَـ نَـ instead of نِـ يَـ نَـ
سَنَبُك (Persian)	→ سَـ نَـ بَـ وِـ k or سَـ نَـ بَـ وِـ q 'barge' ⁷⁸

2.4 ضمة |u| → ي |i| :

manganon (Greek) ⁷⁹	→ مَـ نَـ جَـ نِـ يَـ q 'mangonel'
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3. كسرة |I| (OR ITS NEAR – EQUIVALENT) :

3.1. كسرة |I| → فتحة |A| :

ethir (Greek)	→ اَـ ثِـ رَـ 'ether'
enchelis (Greek)	→ اَـ نَـ قَـ لِـ يَـ s 'eel'
imperator (Latin)	→ اَـ مَـ بَـ رَـ اَـ طَـ وِـ r 'emperor'
وَرِل (Persian)	→ مَـ وِـ نِـ تَـ o 'monitor lizard' ⁸⁰

3.2. ضمة |U| → كسرة |I| :

istoria (Greek)	→ اَـ سَـ طَـ وِـ رَـ e 'fable'
pirghos (Greek)	→ بُـ رَـ جَـ 'tower' ⁸¹

3.3. كسرة |I| → ألف |a| :

tighnon (Greek)	→ طَـ اَـ جَـ n 'frying pan' ⁸²
chech (Hebrew)	→ شَـ اَـ شَـ 'muslin' ⁸³

3.4. كسرة |I| → و |u| :

kazik (Turkish)	→ پَـ وِـ لَـ 'pole or dirty trick' ⁸⁴
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3.5. كسرة |I| → ي |i| :

Varnish (English)	→ وِـ رَـ نِـ شَـ
candela (Greek) ⁸⁵	→ قَـ نَـ دِـ لَـ 'lantern'
archipelaghos (Greek)	→ اَـ رَـ خِـ بِلَـ 'archipelago' ⁸⁶ (Also notice the 'i' I → فتحة a)

B.2 LONG VOWELS :

1. ألف |a| : - (or its near equivalent):

1.1. ألف |a| : → فتحة |a| :

کمانچه (Persian)	→ کَـ مَـ نَـ جَـ e 'violin' ⁸⁷
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- كفادار (Persian) → قفدان⁸⁸ 'kohl container'
- 1.2. ع : | a : | → ألف (Persian) → معكرونه
 maccarone (Italian) → كعك 'cake or pretzel'
 كاك (Persian) → نعناع 'mint'
 نانه (Persian)
- 1.3. ا : | i : | → ي : | a : | → ألف (Turkish) → درابزين⁸⁹ 'railing or banisters'
 trabzan (Turkish)
- 1.4. ا : | y : | → ي : | a : | → ألف (Persian) → قيروان⁹⁰ 'caravan'
 كاروان (Persian)
2. و : | u : | → ا : | a : | → فتحة
 2.1. و : | u : | → ا : | a : | → أفيون⁹¹ 'opium'
 opion (Greek) → خنجر 'dagger'
 خون كار (Persian)
- 2.2. و + فتحة → | a : | → و i.e. the diphthong |aw| :
 روئيڪ (Persian) → رونق⁹² 'splendour of beauty'
- 2.3. ا : | a : | → ا : | a : | → ألف (Syriac) → آذار⁹³ 'March'
 odor (Syriac) → ناقوس⁹⁴ 'bell'
 noqoucho (Syriac) → كسرى⁹⁵ → كوسرو (Syriac) → خسرو (Persian)
 dhimocion (Greek) → ديماس⁹⁶ 'dungeon'
- 2.4. ا : | u : | → ا : | u : | → ضمة (Persian) → برغل⁹⁷ 'cooked, parched and crushed wheat'
 برغول (Persian) → رستاق⁹⁸ 'the village and its vicinity'
 روستاق (Persian)
- 2.5. ا : | i : | → ا : | i : | → ي : | a : | → كوبري⁹⁹ 'bridge'
 Kopru (Turkish) → برغي¹⁰⁰ 'screw'
 burgu (Turkish)
3. ا : | i : | (or its near – equivalent) :
- 3.1. ا : | i : | → فتحة (Persian) → ديدبان 'sentry, guard' (under influence of the following د and ألف)
 ديدبان (Persian) → بسلے or بسلّة¹⁰¹ (with a short final ألف) 'peas'
 piselli (Turkish)
- 3.2. ا : | u : | → ضمة (Greek) → بندق¹⁰² 'hazelnut'
 pondika (Greek)
- 3.3. ا : | i : | → كسرة (Persian) → جربان¹⁰³ 'scabbard'
 كربيان (Persian)
- 3.4. ا : | a : | → ألف (Syriac) → زرافة¹⁰⁴ 'a giraffe'
 zorifo (Syriac)
- 3.5. ا : | u : | → و : | u : |

hairetikos(Greek) → هر قوطي 'heretic'

2.2. SOUNDS THAT DO NOT CONSTITUTE PART OF THE ARABIC PHONOLOGICAL SYSTEM:

Such sounds are often replaced by their nearest homorganic equivalents. سيبويه notes that :

« ... the Arabs assimilate (foreign) letters to Arabic letters... Thus, Persian |g| is changed into either a ج or a ق or a ك as in جُرْبز or قُرْبز or كُرْبز respectively. Similarly, they replace the |p| by a ف in فِرند or a ب as in بِرند... Frequently, they change a letter which does not exist in Arabic, without changing the original structure of the word as in فِرند , بَقَّام , آجر and جُرْبز¹⁰⁵.

In like manner , الجواليقي remarks that the Arabs :

« often change loanwords... by substituting foreign phonemes by their nearest homorganic Arabic equivalents. At times, they may even replace foreign phonemes by heterogeneous(i. e. heterorganic) substitutes. It is imperative to accommodate such changes lest Arabic should be infiltrated by "foreign" phonemes¹⁰⁶.

He, further, quotes الجوهري on the subject and comments on the latter's use of the word تَخْلَطُ 'interfere with' in the sentence "العرب تَخْلَطُ فيما ليس من كلامها" which implies that the Arabs 'interfere with the pronunciation of foreign phonemes and alter the structure of loanwords to conform with the canonical patterns of Arabic. To achieve this they modify loanwords by adding, replacing or eliding a segment or a short vowel(i. e. a. diacritical)'¹⁰⁷.

In المزهري , اليسوعي classifies Arabic phonemic substitutes for foreign sounds into two categories :

- 1- Phonemes which regularly replace foreign sounds : these include the ك , ج , ق and the ف . Such phonemes often replace sounds that have no Arabic equivalents.
- 2- Phonemes which are used to substitute foreign sounds on irregular basis : these include the ل , ل , ع , ش , س and the ز ,¹⁰⁸ though, as was discussed earlier under 2.1 some of these phonemes may replace sounds that have identical arabic equivalents.

Nevertheless, it seems that philologists of late erroneously confined segmental changes to the above said phonemes, despite the fact that سيبويه and الجواليقي were merely citing examples rather than providing an exhaustive account of the subject. Besides, الجواليقي was primarily interested in Persian loanwords in Arabic and , hence, his comments and notes were directed towards the corpus of loanwords that was at his disposal. Indeed, nowadays the subject of foreign sound substitution has become more diverse with the increase in volume of loanwords and the number of source languages. In the following we will present some examples of substituting phonemes which are lacking in the phonological system of Arabic.

A. FOREIGN CONSONANTS :

1. |P| :

This segment constitutes an accidental gap in Arabic phonology and orthography though, as will be discussed below, a devoiced version of the |b| (i. e. |b. |) is present in certain consonantal clusters¹⁰⁹.

1.1. |P| → ب | b | :

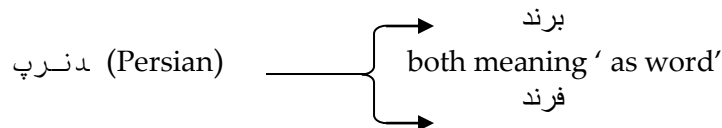
porphura(Greek)	→ برفير 'purple'
Aprilis(Latin)	→ أبريل
Operette(French)	→ أوبريت

Amper(English) → أمبير
 بَرَواز (Persian) → پرواز¹¹⁰

1.2. |P| → ف |f| :

Spongus (Greek) → إسفنج
 piscina(Latin) → فسقية 'fountain'
 فولاد(Persian) → فولاد 'steel'

In certain cases a |P| can be replaced by both a ب and a ف in two versions of the same loanword.
 e.g.



Notice the homorganic feature (labial) in both the original sound and its replacements.

2. |v| :

2-1. |v| → ب |b| (mainly in old loanwords) :

ovrizon (Greek) → إبريز 'pure gold'
 evenos(Greek) → أبنوس¹¹¹ 'ebony'

2.2. |v| → ج |dz| :

Anchova (Spanish) → أنشوجة¹¹² 'anchovis'

2.3. |v| → ف |f| :

Vergilius(Roman poet ; a Latin name) → فيرجيل « Virgil »
 Archives (French) → أرشيف
 Virus (English) → فيروس

2.4. |v| → و |w| :

Varnish (English) → ورنيش (c.f. the French 'vernis')
 Pehlivan (Turkish) → بهلوان¹¹³ 'clown'

3. |tʃ| :

3.1. |tʃ| → ج |dz| :

چنمكة(Persian) → كمنجة 'violin'
 چانك (Persian) → جنك 'a lute'

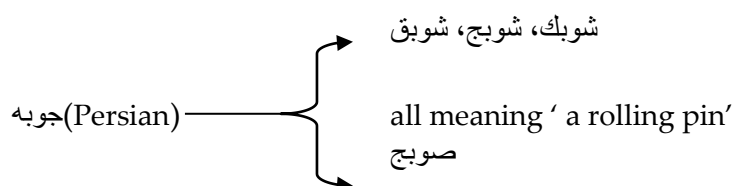
3.2. |tʃ| → ش |ʃ| :

چاي (Persian) → شاي 'tea'
 çanta (Turkish) → شنطة¹¹⁴ 'bag'
 inch (English) → إنش

3.3. |tʃ| → ص |s| :

خارجيني(Persian) → خارصين¹¹⁵ 'zinc'
 چك (Persian) → صك 'contract, document, cheque'

Certain loanwords may have alternative spellings as in :



The |t| may also be rendered as تش as in :

Sandwich (English) → سندويتش

4. |g| :

4.1. |g| → ج |dz| :

Tighnon (Greek) → طاجن¹¹⁶, 'frying pan'

monologue(English/ French) → مونولوج

garçon (French) → جرسون 'waiter'

gumruk(Turkish) → جمرك 'customs'

4.2. |g| → غ |gh| :

Gardiro (Syriac) → غدير¹¹⁷, 'stream, creek'

Augustus (Latin) → أغسطس

Pythagoras (Greek) → فيثاغورس

dogma(Turkish) → دمغة 'stamp, hallmark'

gas(English/ French) → غاز

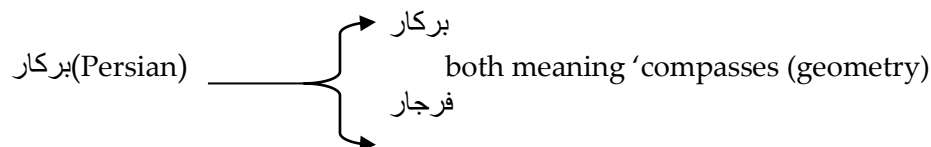
4.3. |g| → ك |k| :

Sagrougo(Syriac) → سكرجة¹¹⁸, 'bowl, platter'

Magoun (Armenian) → مكوك¹¹⁹, 'Shuttle; also a weight measure'

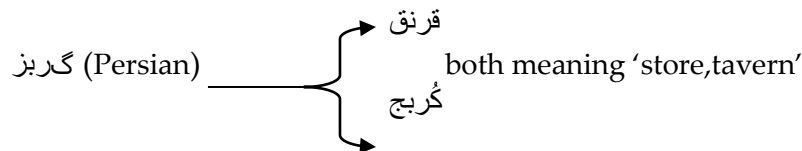
garage(English/ French) → كراج

In some casesn, a loanword may have alternative forms as in :



Also notice that the |g| in sagrougo → سكرجة was replaced by both a ك and a ج within the same word.

4.4. |g| → ق |q| :



Groschen (German) → قرش 'piaster'

اليسوعي claims that the Arabs used a sound similar to the |g| but was abandoned later¹²⁰. Consequently, the ج in جص (Persian : كج) used to be pronounced |g|, for examples, in the dialect of الحجاز as a |g|¹²¹; hence, the change of the ج → ك instead of a ك or ا غ .

5. |z| :

5.1. |z| → ج |d| :

Montage (French) → مونتاچ
régime (French) → رجم

5.2. |z| → ز |z| :

کز (Persian) → قز 'raw silk'
زیوه (Persian) → زئبق 'mercury'

Notice that both original sound and its Arabic equivalent are continuant, coronal, sibilant fricatives.

A NOTE ON MARGINAL CONSONANTAL PHONEMES:

In assimilating foreign sounds, reference is sometimes made to 'marginal phonemes' i.e. classes of sound found only in loanwords such as the |v| in the pronunciation of فيديو 'video' and فيتامين 'vitamin', the |g| in كونغرس 'congress' and the |č| in إنش 'inch' or شارلز (alternatively written تشارلز) 'Charles'. But there is no good reason to treat these sounds as phonemes, whether marginal or not, of Arabic¹²². They may best be regarded as non-Arabic insertions and hence may be pronounced with their original allophonic features, though orthographically written in the nearest Arabic alphabetical symbols. In effect, when we consider the replacement of foreign sounds by their Arabic near-equivalents we could be talking about a process of assimilation on a binary level of spelling and pronunciation or simply a phonemic change at the level of spelling but with the retention of the allophonic quality of the source language phoneme.

In the loanword تلفزيون, the |v| sound of the original 'television' almost always shows transfer, i.e. it is pronounced [v] though written ف in Arabic¹²³. Yet, the analogical form تلفاز, is not likely to show such a transfer since it corresponds to a native morphological pattern in line with سُرْبَال 'shirt'. This indicates that full phonological assimilation goes hand in hand with full morphological integration¹²⁴.

With regard to the |P| in loanwords, Thornberg¹²⁵ observes that the |P| occurs as an allophone of Arabic ب |b| in the environment of syllable -or word- final position in some borrowed lexical items such as:

Chips	→ [tʃ I ps] (the written form in Arabic is شيبس)
Helicopter	→ [he I loka pter] (هليكوبتر)
Captain	→ [kæptin] (كابتن)
express	→ [eksprɛs] (إكسبريس)

To account for such exceptional cases, with respect to the general borrowing rules that stipulates |p| → |b|, she quotes zughloul's¹²⁶ explanation which can be cast in the following notational rule:

$$|b| \rightarrow |p| / [-vd]$$

In other words, the [+vd] b becomes [-vd] before another [-vd] consonant. Further, she refers to Vennemann who, "argued that the process of assimilation is a weakening process and the fact that it occurs in syllable-final position is natural due to the universal strength relations", according to which, "in syllable-final position we are likely to observe processes and the fact that it occurs in syllable-final position we are likely to observe processes of weakening¹²⁷".

It is likely that Thornberg may have overlooked the fact that what she calls exceptional cases are but dialectal pronunciations of the orthographical form for the phoneme |ب|. |p| remains a gap in Arabic proper and the occurrence of not only the |p| as an allophone but also the |tʃ|, |g|, or even the |v| in the pronunciation of Arabized loanwords depends on:-

1. Level of education: some educated Arabs may tend to imitate the original source

sounds of loanwords. sometimes, the speakers may pronounce the word with a feedback from his previous knowledge of the source language¹²⁸.

2. Dialectal influences: some dialects may, out of sluggishness of speech, aspirate the $|b|$ while others may adopt wholesale loanwords with a reproduction of their source sounds.

Further, it should be pointed out that one of the examples given, namely 'express' $\rightarrow [eksprəs]$ has been mistranscribed, since the actual pronunciation of the loanword of the loanform in Arabic is إكسبرس $[eksibres]$ with a break in the consonantal cluster. In such an environment the $|b|$ cannot be made $[-vd]$ by reason of being surrounded by two $[+vd]$ segments.

Rather than a $[-vd]$ allophonic version of the $|b|$ we have, as Thornberg quite rightly observes a devoiced $|b|$ ¹²⁹. However, Thornberg states that the devoicing occurs when the $|b|$ is in initial position in a stressed syllable before low, mostly back vowels. Yet, the examples cited by her are either confined to certain dialects or are brand names the latter's pronunciations are highly irregular and are not subject to a given phonological rule. Indeed the $|b|$ in words like 'ping-pong', 'pepsi' 'tape' or 'pipe' (as cited by Thornberg) is likely to be devoiced by way of original sound transfer though imitation, though Thornberg does not deem it to be so¹³⁰.

Instead, what we have is a general assimilation rule whereby a $|b|$ will be devoiced before $[-vd]$ consonant, i.e. $|b| \rightarrow |b| / [-vd]$. this rule may optionally apply in the pronunciation of كابتن $[t|ibs]$, شبس $[kæptin]$ and any other word with similar consonantal sequence including native Arabic words such as دبس $[dibs]$, 'date sirup'.

Finally, Thornberg notes that "since $|n|$ is neither phonemic nor is it represented in the orthography of Arabic, it is changed to a nasal+ obstruent sequence ..." The articulation of the adapted form is something akin to $n + \begin{cases} k \\ gh \end{cases}$ but not quite an $| \clubsuit |$ ¹³¹.

She cites some examples amongst which are:

Boeing	$\rightarrow Bowing $
Westinghouse	$\rightarrow Westinghous $
Tang	$\rightarrow Tængh $
Exception of the Rule:	
Ping pong	$\rightarrow bij \eta b k \supset \eta $

Well, it seems that Thornberg was misled by the transliterated form of the above words since in actual speech نج or even نك are all pronounced as $|\eta|$ or to be exact $|n| + |g|$ regardless of the orthographical representation. Thus, for example, the word 'congress' is transliterated either as كونجرس or كونغرس but almost always pronounced $|k \supset \eta gres|$ or $|k \supset \eta geres|$. Another equally interesting example is انجلترا or alternatively إنكلترا from French 'Anglettere' $|aŋlatər|$ meaning 'England'. Here, both the ج and the ك are pronounced as a $|g|$, yet, the $|\eta|$ is, to use Thornberg's term, separated into two segments: ج+ن (or ك) with كسرة $|I|$ infixed after the ج (or ك). Thus, the Arabic word would read $|'ingiltarah|$. Once again, the exact pronunciation of the Arabicized form is determined by education and feedback from the speaker's knowledge of the source language.

B. ASSIMILATION OF FOREIGN VOWELS AND DIPHTHONGS:

Both الجواليقي and سيويه make reference to the change of the vowel quality of loanwords upon their assimilation into Arabic. Thus, سيويه states, "وغيروا الحركة", "they (the Arabs) change the vowels"¹³², while الجواليقي includes with other phonological modifications the substitution of a vowel by another as well as making a vowelized (consonant) vowelless and vice – versa¹³³.

In the following, it will be seen that, as with other segmental changes, the quality and length of foreign vowels is determined by way of approximation rather than by any sound phonological criteria.

1. |ä| → فتحة + م |am| or ألف + ن |a : n| (i.e. spreading)

champagne |ʃäpan| (French¹³⁴) → شمبانيا

parlement |parlamä| (French) → برلمان

2. |æ| → فتحة |a| :

sandwich(English) → سندويتش

3. |ε| → ي |z| :

bifteck |biftæk| (French) → بفتيك

étiquette |etiket| (French) → إتيكيت

4. |é| → ألف + ن |a : n| (i.e. spreading) :

mannequin |mank é| (French) → ماننيكان

5. |ɛa| → ألف |a:| :

batteria |bat ɛaria| (Italian) → بطارية

6. |œ| :

6.1. |æ| → و |ɔ:| :

docteur |doktœr| (French) → دكتور

6.2. |œ| → ي |z| :

Coiffeur |kwaf œ r| (French) → كوافير

7. |y| → و |ɔ:| :

caricature |karikatyr| (French) → كاريكاتير

jupe |3 yp| (French) → (ميني جوب as in جوب) جوب

8. |u| → و |ɔ:| :

douche |duʃ| (French) → دوش

doublage |dublaz| (French) → دوبلاج

9. |u| → و |ɔ:| :

rheumatism |ruə:mətizəm| (English) → روماتيزم

10. |ø| → ي |i:| :

De luxe |dølyx| (French) → ديلاكس (notice also |y| → و |ɔ:|)

11. |ɔ| → و + ن |ɔ : n| :

coupon |Kup ɔ| (French) → كوبون (notice also the |u| → و |ɔ:|)

12. |ɔ| → كسرة |I| :

|gəɭba : b| (Ethiopic) → جلباب¹³⁵, 'gown, dress'

|ma : ɔd| (Ethiopic) → مائدة¹³⁶, 'table'

Yet, according to الكاروري, if a | | is adjacent to a bilabial, it is changed to a ضمة |u|¹³⁷ :

e.g. |khðbast| (Ethiopic) → خبز¹³⁸, 'bread'

|bðrh a : n| (Ethiopic) → برهان¹³⁹, 'proof'

2.3. STRESS SHIFT :

This type of change is incurred on loanwords in Arabic owing to:

a-Mispronunciations in the absence of diacritics or as a result of a transliterational error on the part of the translator:

e.g.

étiquette(French) → إتيكيت while according to the French pronunciation etik t it should be إتيكت

nylon(English) → نايْلُون / نيلُون instead of نَيْلُن or نايْلُن

keramis (Greek) → قراميد instead of قرامد

varnish(English) → وارنِش instead of وارنش

Note that in most of the above examples the stress is shifted from the first to the second syllable.

Such erroneous pronunciations which could also be the result of mistransliterating the original source word are but part of the problem of

“... how to represent (foreign) pronunciation within the frame work of the Arabic script. For the dictionary user who knows (the foreign language) well, no pronunciation aid would be necessary. Such a user will recognize the word or pronounce it from his knowledge of its (original) spelling. But the dictionary user who does not know (the foreign language) may wish to pronounce the loanword in a recognizable approximation of its native form... The loanword may be respelled in parentheses with the Arabic vowels and consonants that are closest to the foreign phonemes...¹⁴⁰”.

B-THE INFLUENCE OF ARABIC STRESS PATTERNS:

Arabic tends to place the primary stress on the next to the last syllable. This often results in accentuating or prolonging the stressed sound as it is summed up by ابن جني in الخصائص،

“ when short vowels are accentuated, they are changed to their corresponding long vowels. Thus a فتحة is turned into an ألف, a كسرة into a يـ and a ضمة into a و¹⁴¹”

e.g. ألف → فتحة :

برده (Russian) → بردان 'early morning and evening'

louvi(Greek)/لوبيه(Persian¹⁴²) → لوبياء 'bean'

كسرة → يـ

Candela(Greek) → قنديل

Nickel(English) → نيكل

ضمة → و

Chimos(Greek) → خيموس

Technology(English)/ technologie (French) → تكنولوجيا

Similarly, the stress shift to the syllable before the last accounts for the doubling of the دُكَّان in ك دُكَّان (from Persian : دُكان¹⁴³) and the ر in رَاج 'francolin(zool)' (from Persian : راج¹⁴⁴)

Some cases of stress shift may entail (medial) segmental deletion as in قراميد 'foof tile' (from Greek : keramis) wherein the medial vowel 'a' was dropped owing to transposing the stress to the i | | which as a result was turned to a يـ | i | in قراميد . And in the word رستاق / رستاق 'a village and its outskirts' (from Persian: روستا) the و was deleted as a result of the stress shift.

Finally, in the word جربان 'scabbard' (from Persian: گريبان¹⁴⁵) we have a case of doubling the ب and deleting the يـ .

2.4 SEGMENT AND FEATURE ADDITION :

2.4.1. Declusterization by way of Epenthesis:

in order to break consonant clusters, The Arabs interpose a vowel whether initially or medially (usually after the first consonant) or by prefixing an additional syllable composed of the glottal stop ء (همزة) and a short vowel, thereby creating a new syllable of the type CVC which is permissible in Arabic. Thus , for example, the consonantal string of CCC in words like 'ice cream' and 'express' is broken into CVCC in their arabicized counterparts أيسكريم and إكسبرس . Similarly, CC in Italian

‘balcone’ and French ‘cadre’ is broken into CVC in **بلكونة** and **كادر**.

Initial consonant clusters also undergo epenthesis either by prefixing a **همزة** or inserting a vowel as in the following examples :

كليلو (Syriac)	→ إكليل ¹⁴⁶ ‘crown, wreath’
هليلج (Persian)	→ إهللاج ‘myrobalan’
Scala (Italian)	→ سقالة ‘scaffold’
Drama (English)	→ دراما
Klima (Greek)	→ إقليم ‘region’
Klirikos (Greek)	→ إكليريكي ‘clerical’
sfin (Greek)	→ إسفين ¹⁴⁷ ‘Wedge’
Zmili (Greek)	→ زميل ‘chisel’
drachma (Greek)	→ درهم
Spirito (Italian)	→ إسبرتو
Stade (French)	→ استاد ‘stadium’
Anomalies	
studio (English)	→ ستوديو
flourescent (English)	→ فلورنست
stereo (English)	→ ستيريو
styrofoam (English)	→ ستايروفوم
cement (English) ciment (french)	→ إسمنت (Despite the declusterized sequence of the original).
إنكشتبان (Persian)	→ كشتبان ¹⁴⁸ ‘thimble’

2.4.2 to show inflection, a **همزة** or a **ج** is sometimes added finally to loanwords ending in a vowel or a [h].

e.g. خربا (Persian)	→ حرباء ¹⁴⁹ ‘chameleon’
سارو (Persian)	→ صاروج ‘lime, depilatory agent’
rhetine (Greek)	→ راتينج ‘resin’
sima (Greek)	→ سيماء ¹⁵⁰ ‘mark, sign’

2.4.3 Final Nominal Suffixة :

Accademia (Italian)/ akademeia (Greek ¹⁵¹)	→ أكاديمية
Bourgoise (french)	→ بورجوازية
kathedra (Greek)	→ كاتدرائية ‘cathedral’ (notice the addition of the همزة in line with 2 above regarding final addition to show inflection).
molochi (Greek)	→ ملوخية ¹⁵² ‘jew’s mallow’
strategy (English)	→ إستراتيجية (notice the prefixation of إِ in line with 1 above)

2.4.4. Relative / adjectival ي :

artois (french)	→ إرتوازي
Hidiv (Turkish)/ خديو (Persian)	→ خديوي ¹⁵³
Amarantacées (french)	→ الفصيلة الأمرنيه

2.4.5. In some loanwords from Syriac as well as other languages some segments are doubled probably

to be modelled after existing morphological patterns.

e.g. From Syriac:

جنتو 'ganto'¹⁵⁴

→ (فعلة 'paradise' (according to the the pattern

سمورو 'samouro'

→ (فُعُول 'sable' (according to the pattern

مشلتو 'machalto'

→ (مفعلة 'spire' (according to the pattern

Others :

سنكل / سنك كل (Persian)

→ سجّيل 'lump of clay' (it is modelled after the pattern فَعِيل, to indicate large quantities)

Dhorakinon (Greek)

→ درّاق 'peach' (according to the pattern فُعَال)

Scala (Italia)

→ سقالة¹⁵⁵ 'scaffold' (according to the pattern فَعَالَة)

2.4.6 . Miscellanea :

زراب (Persian)

→ (زربي : singular) ' mat, carpet' (the ي was suffixed to the Persian loanword to form the plural from which the singular was derived by backformation).

Kastanon (Greek)

→ كستناء chestnut' (suffixing 'alif and همزة after deleting the final '- on-)

Abat – jour (french)

→ أباجورة ' lampshade' (suffixing the ة for the grammatical gender of feminine).

Horasan (Turkish)

→ خراسانة¹⁵⁶ 'concrete'

zemerek (Turkish)

→ زنبرك¹⁵⁷ 'spring' (by way of coalescent assimilation)

zidan (Turkish)

→ زنزانة¹⁵⁸ 'prison cell'

Mastro (Italian)

→ مايسترو¹⁵⁹ 'maestro'

2.5. DELETION (ELISION) :

Deletion is yet another morphophonemic process that is administered to loanwords. To begin with, سيبويه remarks that, in Arabic, when two t's i. e. تت come in succession, one of them may optionally be deleted¹⁶⁰. In other words, to cite Bakalla's national formula :

ت / Ø # ت (opt¹⁶¹)

e.g. تتكلمون

→ تكلمون

تتذكرون

→ تذكرون

Further, in his discussion of Arabicized loanwords, سيبويه employs the word حذف¹⁶² 'deletion' to describe one of the changes that are applied to borrowed lexical items. الجواليقي, on the other hand, uses the expression نقصان حرف¹⁶³ i.e. 'the omission of a letter' to describe more or less the same process of deleting a segment or more from the original source. Such changes, according to الكرملی, are attributed to the Arabs' keenness to maintain unstrained and easy pronunciation of loanwords by omitting some of their sounds / letters¹⁶⁴.

In the course of our study, we have noticed that deletion may involve initial, medial or final segments or syllables and may even include the clipping of a part of a word or one member of a compound. In addition, some cases of deletion are language-specific and in effect are more regular than others.

1. INITIAL SEGMENT/SYLLABLE DELETION :

Historia (Greek) → أسطورة 'myth'

Musandira (Turkish) → سندرة¹⁶⁵ 'loft'

انكشتبان (Persian)	→ كشتبان ¹⁶⁶ 'thimble'
بیمارستان (Persian)	→ مارستان ¹⁶⁷ 'hospital'

2. MEDIAL SEGMENT/SYLLABLE DELETION :

Chabbat (Hebrew)	→ سبت ¹⁶⁸ 'Saturday'
Ounguiya (Greek)	→ أوقية 'ounce'
Strata (Greek)	→ صراط 'way, path'
بادزهر (Persian)	→ بازهر ¹⁶⁹ 'pathological globules in animals'
بروهان (Persian)	→ برهان ¹⁷⁰ 'proof'
رونیک (Persian)	→ رونق 'glamour'
فرسنگ (Persian)	→ فرسخ ¹⁷¹ 'league, parasang'
فرهومند (Persian)	→ فرهود ¹⁷² 'stout boy'
نشخوار (Persian)	→ نشواز ¹⁷³ 'fodder remains (livestock)'

3. FINAL SEGMENT/SYLLABLE DELETION :

Fallopian (English)/Fallopio (Italian)	→ فالوب
Axis (English)	→ أکس
شست (Persian)	→ شص ¹⁷⁴ 'fishhook'
نشاسته (Persian)	→ نشا ¹⁷⁵ 'starch'
نردشیر (Persian)	→ نرد 'backgammon'

LANGUAGE SPECIFIC DELETION :

a. SYRIAC :

Generally speaking, final و |و:| in loanwords of a Syriac origin is omitted upon their assimilation into Arabic.

e.g. إكليلو	→ إكليل 'crown, diadem' ¹⁷⁶
ترعتو	→ ترعة 'canal'
تلميذو	→ تلميذ 'pupil'
جبروتو	→ جبروت 'omnipotence, tyranny'
ديرو	→ دير 'monastery'
زبونو	→ زبون 'customer'
سفسيرو	→ سفسير 'broker'
سمورو	→ سمور 'sable'
شحرورو	→ شحرور 'thrush, blackbird'
عربونو	→ عربون 'down payment'
فدنو	→ فدان 'a square measure = 4200.833m ² '

b. GREEK AND LATIN :

In like manner, final segments' syllables in loanwords of Greek or Latin origin are deleted upon their being Arabicised.

e.g. WORDS OF GREEK ORIGIN:

archipelaghos	→ أرخبيل ¹⁷⁷ 'archipelago'
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fanarion	→ فنار ¹⁷⁸ 'lighthouse'
fellinos	→ فلين 'cork'
kalopolion	→ قالب ¹⁷⁹ 'mold, model'
keramis	→ قرميد 'roof tile'
koukoumion	→ قمقم ¹⁸⁰ 'a bulgy, long-necked bottle'
manganon	→ منجنيق 'mangonel'
narkissos	→ نرجس ¹⁸¹ 'narcissus'
patrikios	→ بطريق 'penguin'
paximathi	→ بقسماط 'rusk'
thirayakos	→ ترياق 'potion'
valsamon	→ بلسم ¹⁸² 'balsam'

Deletion of Medial and Final Syllable :

Episcopus → أسقف¹⁸³ 'bishop'

WORDS OF LATIN ORIGIN :

Canalis	→ قناة or قنال 'canal'
Centenarium	→ قنطار 'kantar'
Corphinus	→ قففة ¹⁸⁴ 'large basket'
Denarius	→ دينار 'dinar'
Horreum	→ هري ¹⁸⁵ 'granary'
Marmaroon	→ مرمر ¹⁸⁶ 'marble'
palatium	→ بلاط 'court'

2.6. CLIPPING OF A WHOLE PART OF A WORD OR A MEMBER OF A COMPOUND

بریده دم (Persian)	→ برید ¹⁸⁷ 'mail'
نردشیر (Persian)	→ نرد ¹⁸⁸ 'backgammon'
هزارستان (Persian)	→ هزار ¹⁸⁹ 'nightingale'
hydrakele (Greek)	→ قيلة ¹⁹⁰ or أردده (notice that the original loanform was dissected into two parts each of which was Arabicized individually as a full word, yet, both mean 'hernia').

Sometimes, clipping can take the form of assimilation (usually in syllable final position across word boundaries)

e.g. baking powder → باکینباور [b kinbawder]

2.7. DISSIMILATION :

When two adjacent sounds sound alike, one is altered by changing its feature value in order to preserve the contrast between otherwise homorganic or semi-homorganic segments. Sometimes, this takes the form of addition 'epenthesis' or deletion.

e.g. ددبان (Persian) → دیدبان 'centurian' (Deletion of پ)
 بادزهر (Persian) → بازهر 'bezoar' (Deletion of د)

2.8. METATHESIS :

Arabicization may also involve metathesis, i.e. transposing phonemes or segments from one place to

another.

From Persian :

دار آفرین	→ دارابزین ¹⁹¹	'hand-rail'
دول	→ دلو ¹⁹²	'bucket'
زنجیر	→ جنزیر ¹⁹³	'chain, track for a tank, caterpillar...etc.'
سردار	→ سراق ¹⁹⁴	'pavilion, large tent'
نرماک	→ نمرق ¹⁹⁵	'pillow'

From Hebrew :

صلوتا	→ صلوات ¹⁹⁶	'prayers'
جولیات	→ جالوت ¹⁹⁷	'proper name'

From Syriac :

إفسنتين	→ إسفنت	'favoured juice'
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From Greek :

eparchia	→ أبرشية ¹⁹⁸	'parish, bishopric'
præcoquus	→ برقوق ¹⁹⁹	'plum'
litra	→ رطل	'a unit of weight of variant equivalence : in Egypt 449.28g'.

From Turkish :

eretsane	→ ترسانة ²⁰⁰	'arsenal'
frenlemek	→ فرملة ²⁰¹	'brake'
manovara	→ مناوره ²⁰²	'manœuvre'

2.9 COMPOUNDING

Examples of compounding are few (see under 2.1). Most of such words are the result of transliterating the pronunciation of two SL components in fast speech.

e.g.	كاه رُبا	(Persian)	→ كهرباء	'electricity'
	جامه دان	(Persian)	→ جمدانة	'a large water pot'
	مرزن گوش	(Persian)	→ مرزجوش	'ear lobe'
	خون کار	(Persian)	→ خنجر	'dagger'
	کفجه لیز	(Persian)	→ قفشلیل	'ladder'
	Roba Vecckia	(Italian)	→ روبایکیا	'antiques'
	زم هریر	(Persian)	→ زمهریر	'bitter cold'
	سنگ کل	(Persian)	→ سجیل	'lumps of clay'

But we may notice a multitude of partial translations of compounds, usually in scientific register.

e.g.	Arsenide	→ زرنیخید
	Acide hydro ferrique	→ حمض الأیدروحدیدیک
	Tetrabromide	→ رباعي برومید
	And the awkward 'ideology'	→ فکولوجیا

2.10 . REMODELLING IN ACCORDANCE WITH ARABIC MORPHOLOGICAL PARADIGMS:

The earliest reference made to remodelling loanwords to conform with Arabic word patterns comes from کتاب سیویه

"The Arabs change those foreign words which are absolutely incongruous with their own, sometimes assimilating them into the structure of their words, and sometimes not. As for

دَسْتور	فَعُول	دُسْتور	فَعُول	'jester' or 'buffon' بُهْلُول
سَرْدَاب	فَعْلَال	سِرْدَاب	فَعْلَال	'garment' سِرْبَال
شَطْرَنج		شِطْرَنج		'stout camel' جَرْدَهْل
بَرَطِيل	فَعْلِيل	بِرَطِيل	فَعْلِيل	'stout' صَنْدِير

Generally speaking, loanwords or their derivatives, may undergo alternations aimed at making them correspond with existing Arabic patterns.

SL Loanform	Arabicized Form	Corresponding Pattern
سَنَكْ كُل (persian)	سَجِيل 'lumps of dry clay'	فَعِيل
سَخْت (persian)	سَخِيْت 'callous, tough'	فَعْلِيل
فَدَنُو (Syriac)	فَدَان 'acre'	فَعَال
كُوسُرُو (Syriac) from خُسُرُو (Persian)	كُسْرَى 'khosrau'	فَعْلَى
Coulisses (French)	كُوَالِيْس 'behind the scenes'	Pluralization according to the irregular pattern of فَعَالِيل
Doublage (French)	دَبْلَجَة	مَفْعَلَة
Gargso (Greek) or جَرَجَشْت (Persian)	جَرَجَس 'clay used for sealing or stamping'	فُعَل
Hairesis (Greek)	هَرَطَقَة 'heresy'	فَعْلَلَه
Patrikios (Greek)	بَطْرِيْق 'penuin'	فَعْلِيل
Philosophos (Greek)	فَلَسْفَلَة	فَعْلَلَه
Sindhon (Greek)	سِنْدَس 'silk brocade'	فُعَل
Scala (Italian)	سَقَالَة 'scaffold'	فَعَالَة

The process of remodelling loanwords in order to conform with Arabic word paradigms may involve vast changes in the structure of the loanword including segmental and vowel changes, metathesis, addition, elision and modification of stree-patterns. For example, the word فرملة (Italian : freno) was subjected to major changes :

- 1- Vowel addition : a فتحة |a| was inserted after the ف
- 2- Vowel elision : the 'e' after the 'r' in the original word was deleted.
- 3- Vowel change : the final 'o' in 'freno' was replaced by فتحة |a|.
- 4- Syllable addition : ل was suffixed to the word.
- 5- Segmental addition : a final ة was added to the word فرملة (verb form) to produce the instumental noun فرملة.

It should be pointed out that the first four changes were undertaken in order to remodel the word in accordance with the Arabic quadriliteral paradigm فَعْلَل فِهْمِي. remarks that though this particular word could have been Arabicized as فرينة or فريمة the loanword form of فرملة escapes the confusion that may result from the semantic association of فرينه with فرن 'oven' and of فريمة with فرم 'mincing'. He quotes the example of the unfortunate coinage of the word جَمَاز for 'tram' which is similar in pronunciation to جَمبَاز 'gymnastic' ²⁰⁹, a thing which may justifi the unpopularity of the word جَمَاز in comparison with its Arabicized loanword ترام .

Remodelling may trespass to loanwords whose original pronunciations have correspondent paradigms in Arabic. The Persian word كفجلاز 'ladle' could have been arabicized as such in analogy with the word قفشليل 'sesban', yet, the Arabic form of this word is قفشليل. Such changes are warranted on account of the fact that the Arabs may change a paradigm or ferfeit another if the sound sequence of the original contavenes with the requirements of sound harmony in Arabic²¹⁰. Subsequently, the final ز in كفجلاز was replaced by ل to correspond with the first ل (both anterior) while the ألف (a back vowel) was replaced by a يـ (front vowel) to effect ease of articulation by avoiding the sudden shift from front, to back and front again.

2.11. DERIVATION AND INFLECTION :

Some Arabicized loanwords (other than proper names) have been morphologically naturalized and in effect may undergo a process of derivation in line with Arabic derivational patterns and inflectional affixes.

1-Some loanwords are treated as common nouns and, therefore, may be prefixed with the definite article ال as the following words which were originally borrowed from Persian²¹¹ :

الديباج 'silk brocade'	الأرنج or اليرندج 'black dye'
النيروز 'New Year's day'	الفرند 'sword'
الزنجبيل 'ginger'	الياسمين 'jasmine'
اللجام 'bridle'	الآجر 'baked brick'

Aside from regular inflection, such words can also be nunnated when they are indefinite, thus ياسمينٌ, نيروزاً، ديباج، etc.

Other loan-proper names such as قارون، فيروز، هرمز، يعقوب، إسحاق، إسماعيل، إبراهيم and فرعون are treated on par with definite nouns and, hence, they are neither prefixed with the definite article nor are they subject to nunnation. However, سيويه excludes some loan-proper names such as نوح، هود and لوط which are nunnated owing to their easy pronunciation²¹².

In similar manner, الجواليقي labels as fully naturalized words which admit the definite article whereas those that do not such as موسى and عيسى are deemed foreign²¹³.

2- سيويه cites examples of loanwords which have been pluralized according to جمع التكسير 'broken plural' i.e. the irregular plural form plus an optional final هـ :²¹⁴

e.g.	موز 'slipper'	→ موازجة or موازج
	صولجان 'scepter'	→ صوالجة
	كُربج 'store'	→ كرابجة or كرابج
	طيلسان 'name of a city'	→ طيالسة
	جورب 'sock'	→ جواربة or جوارب

Aside from the irregular plural patterns فواعل and مفاعل as exemplified by the above plural forms (plus the optional final هـ), loanvords may assume other patterns which may assume some intervocalic changes as in : -

كابل or كايبل (English/French : cable) → كيبيلات or كابلات (by suffixing ات) or → كوابل (according to the pattern فواعل)

متر (French : metre)	→ أمتار (according to the pattern أفعال)
زبون (Syriac : زبونو)	→ زبائن (according to the pattern فعاثل)
برميل (French : baril) ²¹⁵	→ براميل (according to the pattern فعاليل)
شهر (Syriac : شهر)	→ أشهر (according to the pattern أفعل)

3- An Arabicized word may be suffixed with 'relative ياء النسبة' as in :

aramrantus (Latin)	→ 'amaranth' الفصيلة الأمرنتية
ideology (English)/ideologie (French)	→ 'ideological' أيديولوجي
tactique (French)	→ 'tactical' تكتيكي

4- Sometimes a given loanword or its abstracted root serves as the basis for deriving parts of speech. Ali notes, for example, that the abstracted root قنن from قانون (Greek : kanon) has yielded ²¹⁶:-

قنن 'legislate'	مقنن 'legislator'
مقنن 'formed in accordance with the law'	قانوني 'lawful'
تقنين 'legislation'	قوانين 'laws'

Similarly, the abstracted root لجم the Persian لكّام has yielded ²¹⁷:-

ألجم 'to bridle'	إلّجم 'to be bridled'
إلجام 'bridling'	لّجام 'one makes bridles'
ألجمة 'bridles'	مُلجم 'bridled'
إستلجم 'ask someone to bridle a horse'	

From the French 'doublage' (English : dubbing), Arabic has derived the following:-

دبلج 'dubbing'	دبلج 'dub'
مدبلج 'dubbed'	دوبلاج 'dubbing technician/switcher'

Finally, from the Turkish 'manovara' ²¹⁸, Arabic has the noun مناورة and the verb يناور 'to manoeuvre' which is a good example of an ill-conceived Arabicized word. The "م" in مناورة was mistakenly thought to be the nominal م as, for example, in مجابهة 'confrontation' from جابه and, accordingly, it was dropped from the verb form.

3. A NOTE ON ARABICIZING PROPER NAMES :-

الكاروري remarks that ancient Arabs subjected proper names to the same phonological and morphological changes that they often apply to common loanwords. Thus, for example, in the following names we find various changes in the forms of segmatal changes (S), addition (A), elision (E) and metathesis (M). ²¹⁹.

Original Loanform	Arabicized from	Changes
أنكوري	أنقرة	S : ق → ك فتحة → و فتحة → ي A : final ة
هاران	حرّان	S : ح → ه فتحة → ألف A : doubling the ر
كامرون	قماري	S : ق → ك ي → و M : ألف → م E : final ن

Some Modified Proper Loanwords in Arabic.

Nevertheless, when a proper name conforms with canons of Arabic, it is often left unchanged.

e.g. بردان (a village near Baghdad) from Persian بردان

الكاروري however, cautions against changing proper names lest the modified form be confused with other proper names as in case of 'Bologna' in Italy and 'Boulogne' in France. With respect to common pronunciations, the former should be Arabicized (or rather transliterated) بولونيا while the latter بولوين. Unfortunately, 'poland' is also alternatively Arabicized as بولونيا. An easy way out would be to abandon the Arabicized form for 'Poland' and use, instead, the common form currently in usage بولندا.

While embarking upon proper names, ancient Arab philologists contended with citing examples without canonizing any methodology for the preservation or the adaptation of the original pronunciation. الخفاجي, for instance, states, at one point, that proper names are to be analogically Arabicized, yet he stops short from setting for what, if any, analogical methods, were used by the Arabs²²⁰. He points out as does ابن سيده that anomalies abound in Arabicizing foreign proper names²²¹. By anomalies, they mean those names which are in breach of Arabic analogical patterns. In other words, such names were not subjected to modifications as the author of جامع التعريب unequivocally states "proper names do not admit any changes"²²².

The Egyptian Language academy as well as some contemporary linguists like الشهابي and الكرمللي stipulated that foreign proper names should be adopted according to their pronunciations in the source languages (or their most commonly used pronunciations)²²³. Their arguments was that most foreign proper names are used worldwide irrespective of a given language. Nonetheless, the Academy advanced that (Biblical) names which were Arabicized by ancient Arabs are to be preserved without any change²²⁴.

e.g.	Victor	→ بقطر
	Paul	→ بولس
	Jacob	→ يعقوب
	Job	→ أيوب
	Peter	→ بطرس

Yet, some names –when in non-Biblical texts –are transliterated nowadays as بول، فكتور، and بيتتر.

Conversely the purists like الأسكندري and أحد شاكر criticized this resolution on the grounds that it will only result in the Arabic language being infiltrated by foreign sounds. Further, the public will find it difficult to pronounce foreign proper names which consist of foreign (i.e. non-Arabic) sounds²²⁵ like the |v| |tʃ| and the |g|.

CONCLUSION :

While this study has attempted to classify the corpus of loanwords according to etymology and define the criteria for morphophonemic changes, yet many issues remained unresolved and call for more extensive analysis. For instance, subsequent studies could tackle the status of Arabic words borrowed or assimilated into other languages. A comparison can, therefore, be drawn between types of changes of loanwords in both Arabic as well as foreign languages. Further, a more thorough and precise etymological analysis is needed to account for anomalies. Finally, comparative lexicographers can compile dictionaries that list loanwords with their original SL form and TL assimilated version.

NOTES

1. Ali, p. 87
2. Holden, p.4.
3. Thormberg, p.524.
4. Ali, p. 87
5. op. cit., pp. 97-8
6. الحمزاوي, p 171.
7. المزهري السبوطي in المزهري, vol 1, p.304.
8. المحبى, p. 17.
9. المغربي, quoted by عيد, p.86.
10. الخفاجي, p. 189, 14-15, 167, 186, 153, 62, 36 respectively.
11. Quoted by الشهابي, p.72.
12. عيد, ص118.
13. Aziz, in META, p. 80.
14. عيد, p.118.
15. Sibawayh, al-kitab, vol. 2, p.342. Note that original Arabic text includes words like 'may, or, often, frequently' which indicate that such rules admit exceptions and anomalies and are by no means conclusive.
16. الكاروري, ص 351
17. I owe the division of segmental changes to Ali (1987), pp.108-9.
18. سبيويه, p.342, the translation is by Bakalla, p.72.
19. سبيويه, pp.342-3, the translation is by Bakalla, p.72.
20. In الجواليقي, the origin of إسماعيل is given the Syriac إسماعيل. However, on p.188, he cites the Syriac إسماعيل for إسماعيل to which the editor شاكرك gives the Hebrew origin. إسماعيل
21. p. 127 cites the Persian origin as كفته ليز. Therefore, the ج is not an Arabic sound.
22. الخفاجي (1325), p.4.
23. الجواليقي, p.90, 118, 209, 221.
24. The reader may notice that some Syriac, Hebrew and other loanwords may at times appear in Arabic characters and at others in Latin alphabet. Our purpose is to preserve the form and, hence, the pronunciation of word according to the way they are quoted in our sources.
25. الجواليقي, p.90.
26. اليسوعي, p. 256.
27. الخفاجي (1325 A.H), p. 170. Notice that the Persian ج is actually closer in pronunciation to |ع|, a mixture of a ج and ز, hence the change to ز, ش, س and ص.
28. الكاروري, p.382.
29. الجواليقي, p. 95.
30. اليسوعي, p.172.
31. عيد الرحيم, p. 155.
32. الجواليقي, p. 209.
33. Op. cit., p. 27.
34. الكاروري, p. 380.
35. الجواليقي, p. 352, attributes this change to the fact that in Arabic there is no such segmental sequence, since a ز cannot be preceded by a د.
36. عيد الرحيم, p. 45.
37. Op. cit., p. 44.
38. الكاروري, p. 380. He quotes الخصائص in ابن جنى (vol. I., pp. 57-8) who justifies the change of the ز by the tendency in Arabic to replace fricative sounds such as the ز, س and ح in final position by plosive sounds in order to mark the ending of a word with a stop and to relieve the tension needed to produce fricatives.
39. الكاروري, p. 378.
40. الجواليقي, p. 207, yet اليسوعي, p. 191 attributes its origin to Syriac.
41. فهمي, p. 179.
42. اليسوعي, p. 211.
43. الكاروري, p. 381.
44. اليسوعي, p. 201.
45. الجواليقي, p. 302.
46. شير, p. 109.
47. اليسوعي, p. 194.

48. شير, p. 8. He also gives a possible Sanskrit origin : ragavan.
49. Op. cit., p. 68.
50. Op. cit., p. 4.
51. اليسوعي, p. 255.
52. السبوتي, in المتوكلي, p. 10 as cited by الكاروري, p. 371.
53. عبد الرحيم, p. 96.
54. اليسوعي, p. 258.
55. شير, p. 150 attributes the origin of this word to Persian, yet we are of the opinion that the Greek origin 'ankura' is phonemically more likely.
56. Again, this is a case of questionable etymology : whereas الجواليقي p. 230 attributes it to Persian لشكر, the editor of his book claims that it is a genuinely Arabic word (sec. الجواليقي, p. 230).
57. As was stated earlier under شير, ص → ش p. 109 traces it back to Persian شمن while, here, فهمي, p. 175 refers it back to Syriac.
58. عبد الرحيم, p. 53.
59. انيس, p. 61.
60. اليسوعي, p. 260.
61. شير, p. 109.
62. الخفاجي (1325), p. 69.
63. شير, p. 109.
64. See سبيويه pp. 342-3 where he cites the Persian loanwords كوسق 'having incomplete teeth' and قريق or كريق 'store or tavern'.
65. الكاروري, p. 390.
66. Ibid
67. Ali, p. 109 – 110.
68. Ibid
69. el-Skeikh, p. 440.
70. سبيويه, p. 343.
71. Irrespective of any IPA transcription of the original vowel in the source language, we are mainly concerned, here, with representing the exact (but hypothetical) Arabic equivalent in contrast with the actual vowel in the Arabicized form.
72. اليسوعي, p. 280.
73. اليسوعي, p. 282.
74. فهمي, p. 175.
75. Ibid
76. اليسوعي, p. 25.
77. Collins English Dictionary , p. 971.
78. شير, p. 95.
79. Collins English Dictionary , p. 895.
80. شير, p. 159.
81. اليسوعي, p. 254.
82. Op. cit., p. 261.
83. Op. cit., p. 212.
84. عبد الرحيم, p. 154.
85. Collins Dictionary, p . 219.
86. Op. cit., p. 73.
87. شير, p. 137.
88. Op. cit., p. 263.
89. اليسوعي, p. 258.
90. Op. cit., p. 241.
91. Op. cit., p. 253.
92. اليسوعي, p. 230.
93. Op. cit., p. 172 The [u:] in most loanwords of Syriac origin is changed to an ألف in Arabic.
94. Op. cit., p. 208.
95. According to ابن جني, there are no such names in Arabic which end in a final و preceded by a ضمة except in the verbs يدعو and يغزو (see الكاروري, p. 396). Yet, مراد كامل attributes the change to the presence of a word pattern فَعَلَى in Arabic. See his article « Persian Words in Ancient Arabic » in Bulletin of the Faculty of Arts, Cairo, vol. 19, 1951, p. 63.

96. اليسوعي , p. 258.
97. عبد الرحيم , p. 26.
98. اليسوعي , p. 230.
99. عبد الرحيم , p. 125.
100. Op. cit., p. 26.
101. اليسوعي , p. 278.
102. Op. cit., p. 255.
103. الجواليقي , p. 99.
104. اليسوعي , p. 184.
105. سبيويه , pp. 242-3. Translated by Bakalla, pp. 72-3 (with adaptation).
106. الجواليقي , p. 6.
107. Ibid.
108. السيوطي , vol. I, p. 274.
109. Thornberg, p. 530.
110. p. 21. شير.
111. Both Greek words from اليسوعي , p. 251.
112. عبد الرحيم , p. 18.
113. Op. cit. , p. 41.
114. عبد الرحيم , p. 93.
115. شير , p. 59.
116. السيوعي , p. 261.
117. Op. Cit., p. 197.
118. Op. cit., p. 188. Note the first |g|→ ك while the second |g| → ج
119. فهمي , p. 182.
120. اليسوعي , p. 215.
121. أنيس , p. 68.
122. Adapted from Simpson, p. 71.
123. Ali (1987) p. 117.
124. Ibid.
125. Thornberg p. 53.
126. M. R. Zughloul, "Lexical Interference of English in Eastern Province Saudi Arabia", Anthropological Linguistics 20, quoted by Thornberg, p. 532.
127. Thornberg, p. 532.
128. She acknowledges this fact but under another section.
129. Op. cit, p. 530.
130. Thornberg, p. 530.
131. Op. Cit., p. 534-5.
132. سبيويه , p. 342.
133. الجواليقي , p. 6.
134. The reader may notice that most loanwords with foreign vowels in this section come from French which by far has the most versatile vowel system. Consequently, French vowels are often susceptible to modifications.
135. الكاروري , p. 394.
136. Ibid.
137. Ibid.
138. Ibid.
139. Ibid.
140. Peter, p. 448. The parentheses are mine. For more on the subject, see section 4.3. on misspelling and mispronunciation.
141. ابن جني , p. 315.
142. Greek according to اليسوعي p. 269, but Persian according to شير , P. 142.
143. Persian according to شير , p. 65 while according to فهمي p. 176 it is Greek (dokneion).
144. شير , p. 61.
145. اليسوعي , p. 222.
146. اليسوعي , p. 173.
147. Op. cit., p. 259.
148. اليسوعي , p. 243.
149. الجواليقي , 118.

150. عبد الرحيم , p. 83.
151. شير , p. 77.
152. عبد الرحيم , p. 66,
153. Op. cit., p. 80,
154. عبد الرحيم , p. 156.
155. Bakalla. , p. 76.
156. عبد الرحيم , p. 133.
157. اليسوعي , p. 261.
158. فهمي , p. 176.
159. The Latin transcriptions of Syriac loanwords are quoted as cited by اليسوعي , p. 177, 188, 177 and 180 respectively.
160. سيبويه , pp. 425-6
161. Bakalla, p. 41.
162. سيبويه , p. 342.
163. الجواليقي , p. 5.
164. الكرمل , p. 15, 82.
165. عبد الرحيم , p. 165.
166. Op. cit., 243.
167. شير , p. 145.
168. اليسوعي , p. 212.
169. المغربي , p. 41.
170. شير , p. 21.
171. فهمي , p. 179.
172. شير , p. 119.
173. Op. cit., p. 4.
174. Op. cit., p. 100.
175. فهمي , p. 179.
176. All example of Syriac loanwords are taken from : اليسوعي p. 173-75, 177, 180, 187, 190, 191, 197, 202, 206, 208, 209, However, the use of Arabic letters in source word transcription is ours.
177. اليسوعي , p. 252.
178. Op. cit., p. 263.
179. فهمي , p. 176 .
180. Op. cit., p. 266.
181. Op. cit., p. 271.
182. Ibid.
183. الكرمل , p. 15, 82.
184. اليسوعي , p. 279.
185. شير , p. 150.
186. فهمي , p. 175.
187. شير , p. 21.
188. اليسوعي , p. 247.
189. شير , p. 4.
190. For more examples, see الكرمل p. 15, 82, 85
191. شير p. 61.
192. اليسوعي p. 228.
193. Op. cit., p. 224.
194. الجواليقي p. 200.
195. Op. cit., p. 154,
196. الجوليقي p. 211. It is questionable though whether the word was Arabicized in its plural form owing to the presence of the awkward singular form صلوة
197. الكاروري p. 405.
198. اليسوعي p. 251.
199. Op. cit., p. 277.
200. عبد الرحيم , p. 49. ironically, this word is etymologically of an Arabic origin دار which was passed on to other languages (including Italian, French and English) and was later Arabicized as ترسانة.
201. Op. cit., p. 104.
202. عبد الرحيم , p. 13 (See note under derivation from loanwords with regard to its etymological background).

203. سبيويه p. 342. The translation is by J. Stetkevych, pp. 59-60. The paranthesis as well as some minor alterations are mine.
204. Ibid.
205. Ali (1987), p. 99.
206. الجواليقي p. 6.
207. الشهابي , as quoted by , p. 18.
208. Ai (1987), p. 98.
209. فهمي, p. 211.
210. الكاروري p. 407.
211. The examples are mentioned in سبيويه , p. 19 yet without providing any etymological background information as to their source language or original forms.
212. Ibid.
213. الجواليقي , p. 5,
214. سبيويه , p. 201.
215. عبد الرحيم , p. 22, traces its origin back to Spanish : barril.
216. Ali , p. 114.
217. Ibid.
218. عبد الرحيم, p. 13 It is of questionable etymology ; it could be from French ‘manœuvre’ or Latin ‘manuopera’ Yet, being a relatively recent lexical entry and in view of the proximity in pronunciation with ‘manovara’, it is most likely of a Turkish origin.
219. الكاروري, p 171. The examples are from الخفاجي , p. 35, 57, 103, 218. No etymological information is provided in either references with regard to source language(s) . the analysis of changes is mine.
220. الخفاجي , (1371), p. 205.
221. الخفاجي , (1325), p.3
222. جامع التعريب بالطريق القريب (author anonymous), مكتبة الأوقاف العامة , بغداد (see الكاروري , p.427)
223. الشهابي, p.20, 88 and الكرملی , p. 778,799, 1082-83.
224. مجلة مجمع اللغة العربية, الجزء 4, pp. 18-21.
225. الكاروري , p. 165.